Strategic Information **MANAGEMENT**

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Lecture 02
Global E-business, Information Systems, and Collaboration.

In order to operate, businesses must deal with many different pieces of information about suppliers, customers, employees, invoices, and payments, and of course their products and services. They must organize work activities that use this information to operate efficiently and enhance the overall performance of the firm.

Learning objectives.
After studying this lecture, you will be able to answer the following questions:

1. What are business processes? How are they related to information systems?
2. How do systems serve the different management groups in a business?
3. How do systems that link the enterprise improve organizational performance?
4. Why are systems for collaboration and social business so important and what technologies do they use?
5. What is the role of the information systems function in a business?

Indicative content, part 01

1 BUSINESS PROCESSES AND INFORMATION SYSTEMS

- Business Processes
- How Information Technology Improves Business Processes

Indicative content, part 02

2 TYPES OF INFORMATION SYSTEMS

- Systems for Different Management Groups
- Systems for Linking the Enterprise E-business, E-commerce, and E-government

Indicative content, part 03

3 SYSTEMS FOR COLLABORATION AND SOCIAL BUSINESS

- What is Collaboration?
- What is Social Business?
- Business Benefits of Collaboration and Social Business
- Building a Collaborative Culture and Business Processes
- Tools and Technologies for Collaboration and Social Business

Indicative content, part 04

4 THE INFORMATION SYSTEMS FUNCTION IN BUSINESS

- The Information Systems Department
- Organizing the Information Systems Function

<table>
<tr><th>Lecture</th><th>Lesson</th><th>Teaching Contents
Chapter/Topic/</th><th>Task/Work</th></tr>
<tr><td rowspan="5">No.02</td><td>Topic title and General Information</td><td>2. Global E-business and Information Systems
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Part 01

1. BUSINESS PROCESSES AND INFORMATION SYSTEMS

In order to operate, businesses must deal with many different pieces of information about suppliers, customers, employees, invoices, and payments, and of course their products and services. They must organize work activities that use this information to operate efficiently and enhance the overall performance of the firm.

1.1 BUSINESS PROCESSES

Business processes, which we introduced in Lecture 01, refer to the manner in which work is organized, coordinated, and focused to produce a valuable product or service. Business processes are the collection of activities required to produce a product or service. These activities are supported by flows of material, information, and knowledge among the participants in business processes.

BUSINESS PROCESSES, part 02

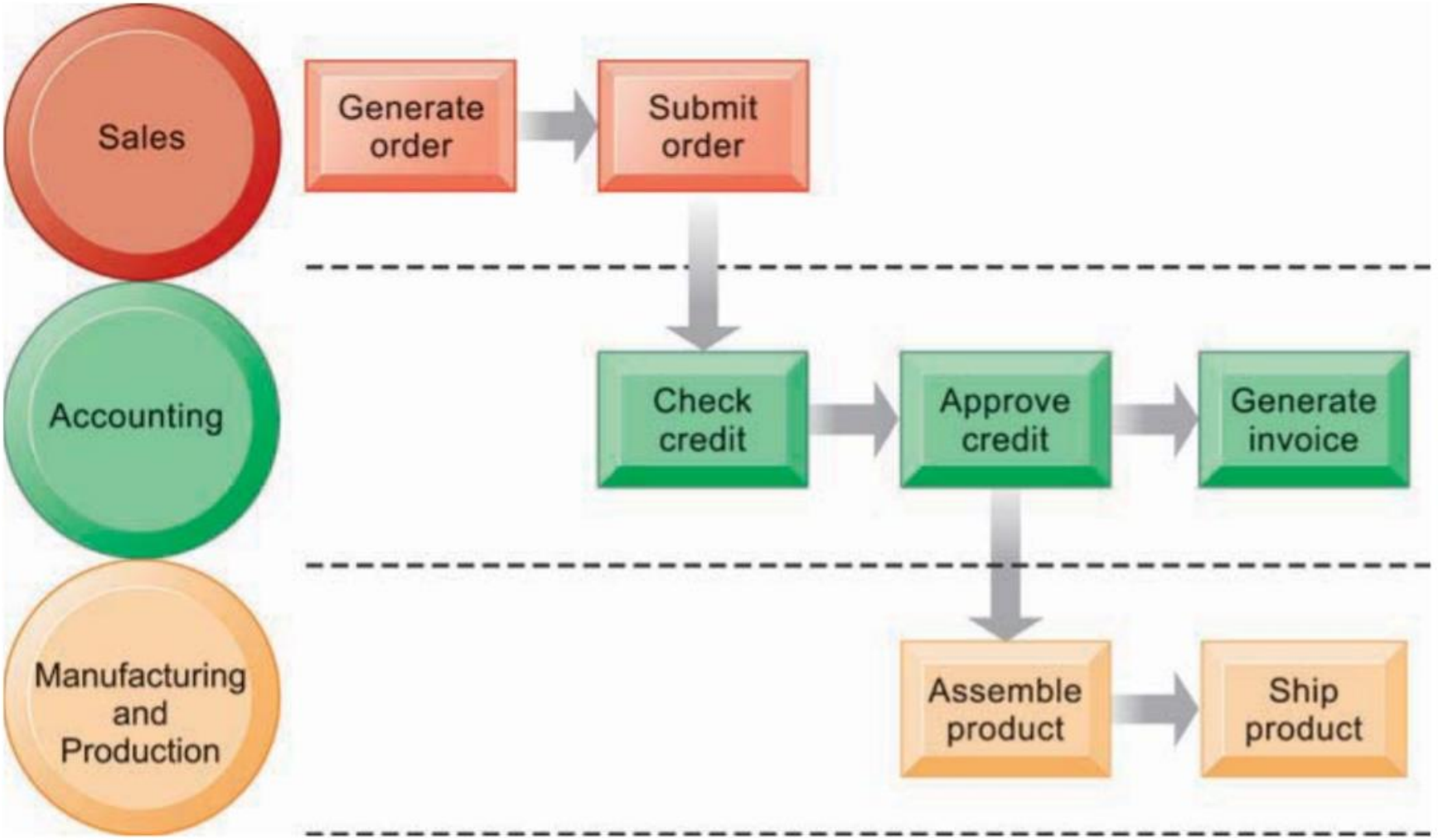
To a large extent, the performance of a business firm depends on how well its business processes are designed and coordinated. A company's business processes can be a source of competitive strength if they enable the company to innovate or to execute better than its rivals.

BUSINESS PROCESSES, part 03

TABLE 2.1 EXAMPLES OF FUNCTIONAL BUSINESS PROCESSES

FUNCTIONAL AREA	BUSINESS PROCESS
Manufacturing and production	Assembling the product Checking for quality Producing bills of materials
Sales and marketing	Identifying customers Making customers aware of the product Selling the product
Finance and accounting	Paying creditors Creating financial statements Managing cash accounts
Human resources	Hiring employees Evaluating employees' job performance Enrolling employees in benefits plans

FIGURE 2.1 THE ORDER FULFILLMENT PROCESS



Fulfilling a customer order involves a complex set of steps that requires the close coordination of the sales, accounting, and manufacturing functions.

THE ORDER FULFILLMENT PROCESS, part 02

What at first appears to be a simple process, fulfilling an order, turns out to be a very complicated series of business processes that require the close coordination of major functional groups in a firm. Moreover, to efficiently perform all these steps in the order fulfillment process requires a great deal of information.

1.2 HOW INFORMATION TECHNOLOGY IMPROVES BUSINESS PROCESSES

- Exactly how do information systems improve business processes? Information systems automate many steps in business processes that were formerly performed manually, such as checking a client's credit, or generating an invoice and shipping order.
- New information technology frequently changes the way a business works and supports entirely new business models. Downloading an e-book from Amazon, buying a computer online, and downloading a music track from iTunes are entirely new business processes based on new business models.

2. TYPES OF INFORMATION SYSTEMS

- A typical business organization has systems supporting processes for each of the major business functions—sales and marketing, manufacturing and production, finance and accounting, and human resources.
- A typical firm also has different systems supporting the decision-making needs of each of the main management groups we described in Lecture 01. Operational management, middle management, and senior management each use systems to support the decisions they must make to run the company. Let's look at these systems and the types of decisions they support.

2.1 SYSTEMS FOR DIFFERENT MANAGEMENT GROUPS

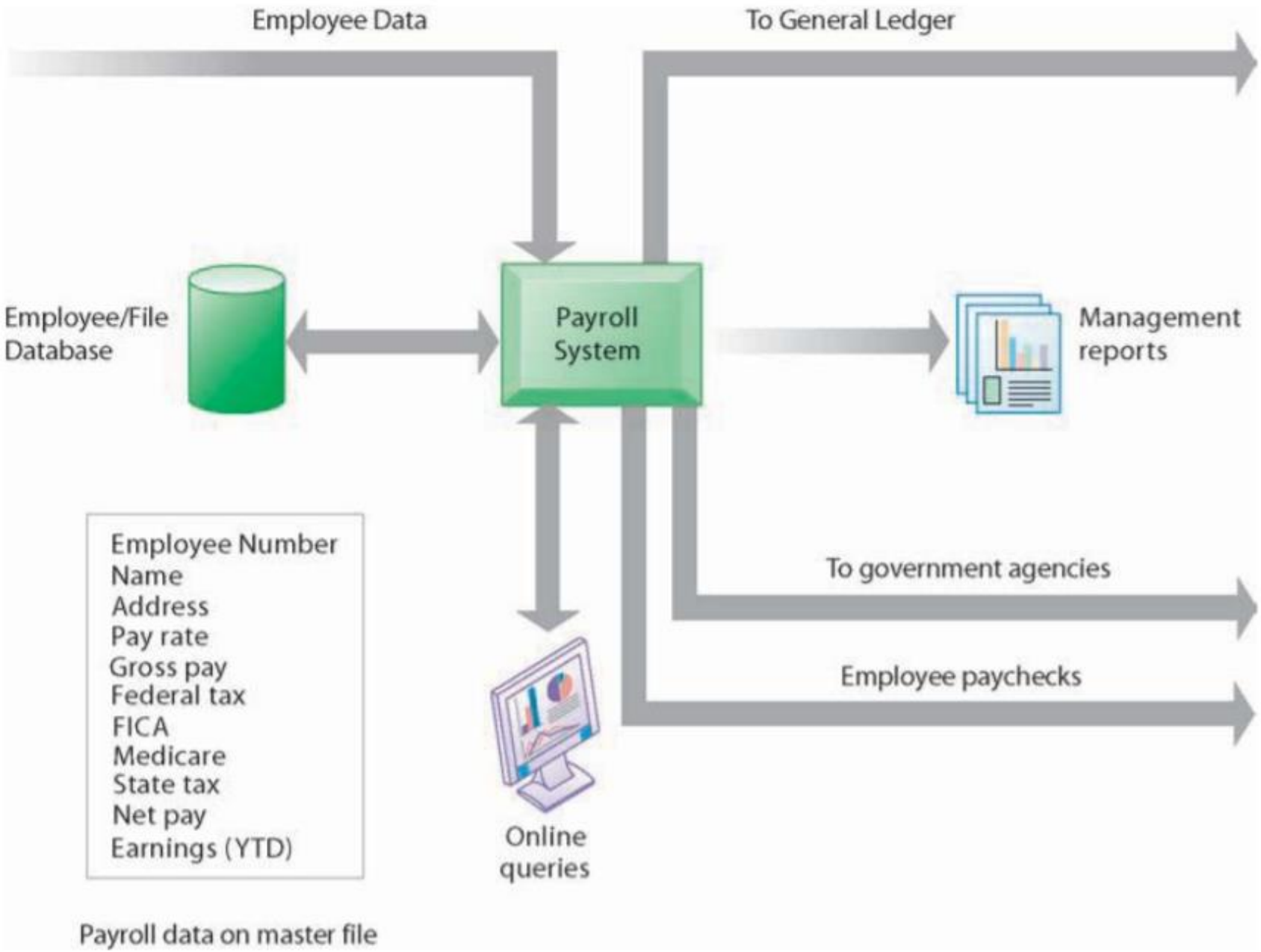
A business firm has systems to support different groups or levels of management. These systems include

- transaction processing systems
- and systems for business intelligence.

Transaction Processing Systems

Operational managers need systems that keep track of the elementary activities and transactions of the organization, such as sales, receipts, cash deposits, payroll, credit decisions, and the flow of materials in a factory. Transaction processing systems (TPS) provide this kind of information. A transaction processing system is a computerized system that performs and records the daily routine transactions necessary to conduct business, such as sales order entry, hotel reservations, payroll, employee record keeping, and shipping.

FIGURE 2.2 A PAYROLL TPS



Transaction processing systems

Transaction processing systems are often so central to a business that TPS failure for a few hours can lead to a firm’s fail and perhaps that of other firms linked to it.

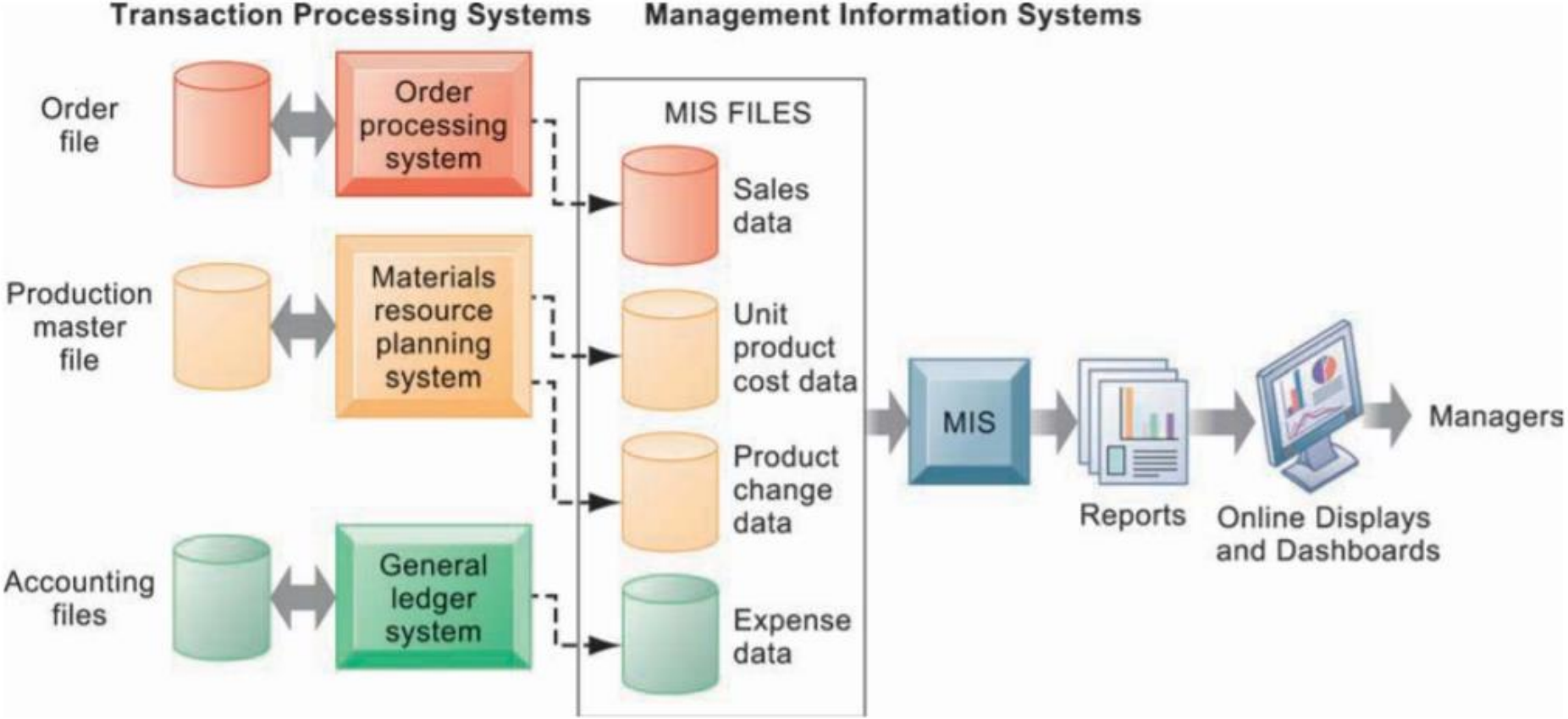
Systems for Business Intelligence

Firms also have business intelligence systems that focus on delivering information to support management decision making. Business intelligence is a contemporary term for data and software tools for organizing, analyzing, and providing access to data to help managers and other enterprise users make more informed decisions.

5-10 minute break
Systems for Business Intelligence, part 02

- Business intelligence systems for middle management help with monitoring, controlling, decision-making, and administrative activities. In lecture 01, we defined management information systems as the study of information systems in business and management. The term management information systems (MIS) also designates a specific category of information systems serving middle management.

FIGURE 2.3 HOW MANAGEMENT INFORMATION SYSTEMS OBTAIN THEIR DATA FROM THE ORGANIZATION'S TPS



In the system illustrated by this diagram, three TPS supply summarized transaction data to the MIS reporting system at the end of the time period. Managers gain access to the organizational data through the MIS, which provides them with the appropriate reports.

MIS

MIS typically provide answers to routine questions that have been specified in advance and have a predefined procedure for answering them. For instance, MIS reports might list the total pounds of lettuce used this quarter by a fast-food chain or, as illustrated in Figure 2.4, compare total annual sales figures for specific products to planned targets. These systems generally are not flexible and have little analytical capability.

DDS

Other types of business intelligence systems support more non-routine decision making. Decision-support systems (DSS) focus on problems that are unique and rapidly changing, for which the procedure for arriving at a solution may not be fully predefined in advance. They try to answer questions such as these: What would be the impact on production schedules if we were to double sales in the month of December? What would happen to our return on investment if a factory schedule were delayed for six months?

Executive support systems (ESS)

Executive support systems (ESS) help senior management make these decisions. They address non-routine decisions requiring judgment, evaluation, and insight because there is no agreed-on procedure for arriving at a solution. ESS present graphs and data from many sources through an interface that is easy for senior managers to use. Often the information is delivered to senior executives through a portal, which uses a Web interface to present integrated personalized business content.

Real-time management

Data captured at the factory or sales floor level are immediately available for high-level or detailed views in executive dashboards and reports. It's real-time management. The Interactive Session on Management illustrates information-driven management at work in Procter & Gamble (P&G), a world-class corporation.

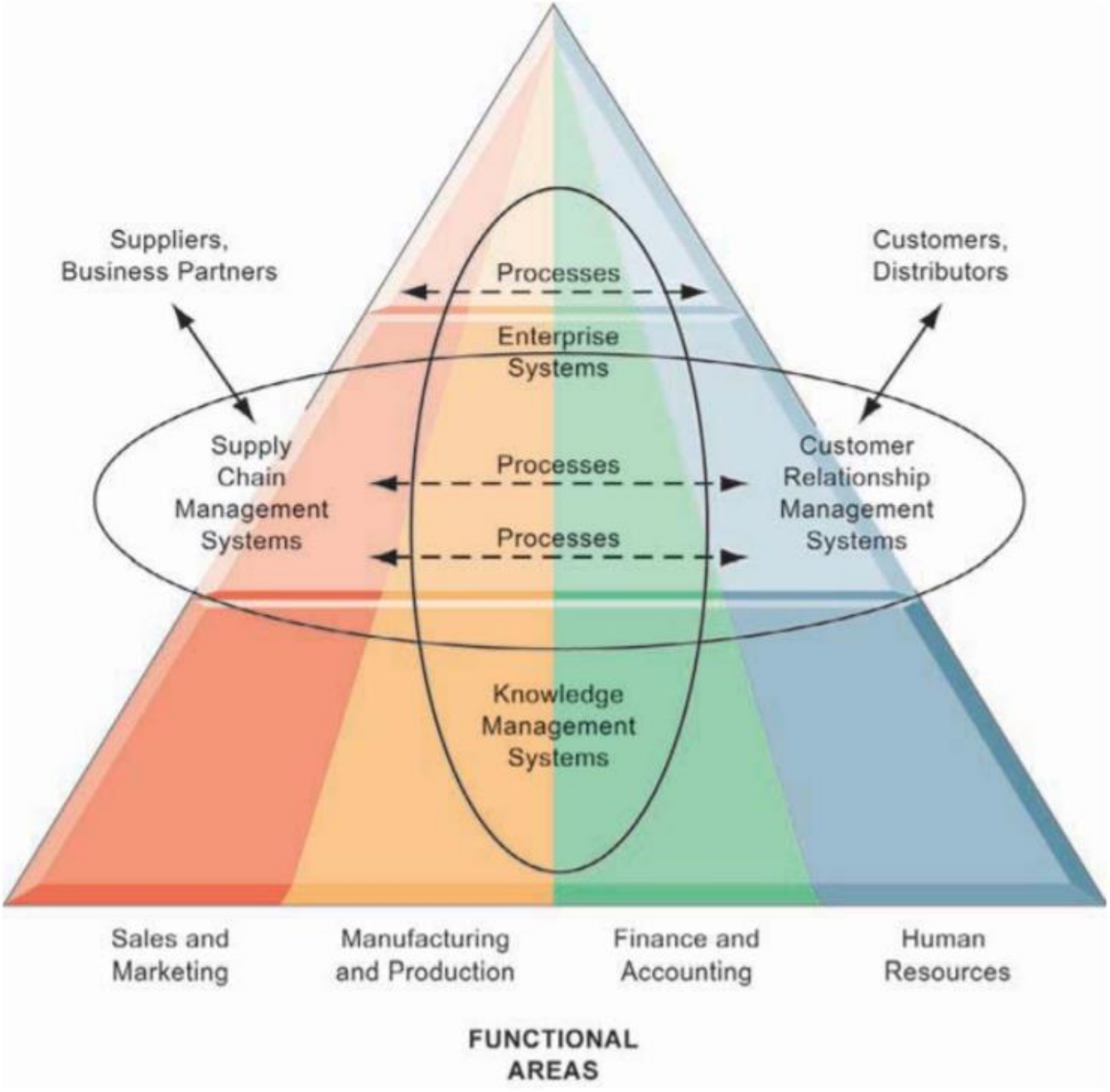
SYSTEMS FOR LINKING THE ENTERPRISE

Reviewing all the different types of systems we have just described, you might wonder how a business can manage all the information in these different systems. You might also wonder how costly it is to maintain so many different systems.

Enterprise Applications

- Over a period of time, corporations end up with a collection of systems, most of them older, and face the challenge of getting them all to “talk” with one another and work together as one corporate system. There are several solutions to this problem.
- One solution is to implement enterprise applications, which are systems that span functional areas, focus on executing business processes across the business firm, and include all levels of management.

FIGURE 2.6 ENTERPRISE APPLICATION ARCHITECTURE



Enterprise resource planning (ERP) systems

Enterprise Systems Firms use enterprise systems, also known as enterprise resource planning (ERP) systems, to integrate business processes in manufacturing and production, finance and accounting, sales and marketing, and human resources into a single software system.

Supply Chain Management Systems (SCM)

Supply Chain Management Systems Firms use supply chain management (SCM) systems to help manage relationships with their suppliers. These systems help suppliers, purchasing firms, distributors, and logistics companies share information about orders, production, inventory levels, and delivery of products and services so they can source, produce, and deliver goods and services efficiently.

Customer Relationship Management Systems (CRM)

Customer Relationship Management Systems Firms use customer relationship management (CRM) systems to help manage their relationships with their customers. CRM systems provide information to coordinate all of the business processes that deal with customers in sales, marketing, and service to optimize revenue, customer satisfaction, and customer retention.

Knowledge Management Systems (KMS)

Some firms perform better than others because they have better knowledge about how to create, produce, and deliver products and services. This firm knowledge is unique, difficult to imitate, and can be leveraged into long-term strategic benefits. Knowledge management systems (KMS) enable organizations to better manage processes for capturing and applying knowledge and expertise.

Collaboration systems

- We examine enterprise systems and systems for supply chain management and customer relationship management in greater detail later.
- We discuss collaboration systems that support knowledge management in this lecture

Intranets and Extranets

- Intranets and extranets deserve mention here as alternative tools for increasing integration and expediting the flow of information within the firm, and with customers ad suppliers
- Intranets are simply internal company Web sites that are accessible only by employees. The term “intranet” refers to an internal network, in contrast to the Internet, which is a public network linking organizations and other external networks. Intranets use the same technologies and techniques as the larger Internet, and they often are simply a private access area in a larger company Web site.

5-10 minute break

E-BUSINESS, E-COMMERCE, AND E-GOVERNMENT

- Electronic business, or e-business, refers to the use of digital technology and the Internet to execute the major business processes in the enterprise. E-business includes activities for the internal management of the firm and for coordination with suppliers and other business partners. It also includes electronic commerce, or e-commerce.

E-GOVERNMENT

The technologies associated with e-business have also brought about similar changes in the public sector. Governments on all levels are using Internet technology to deliver information and services to citizens, employees, and businesses with which they work.

2.3 SYSTEMS FOR COLLABORATION AND SOCIAL BUSINESS

With all these systems and information, you might wonder how is it possible to make sense of them? How do people working in firms pull it all together, work towards common goals, and coordinate plans and actions? Information systems can’t make decisions, hire or fire people, sign contracts, agree on deals, or adjust the price of goods to the marketplace

WHAT IS COLLABORATION?

- Collaboration is working with others to achieve shared and explicit goals. Collaboration focuses on task or mission accomplishment and usually takes place in a business, or other organization, and between businesses.
- Collaboration can be short-lived, lasting a few minutes, or longer term, depending on the nature of the task and the relationship among participants. Collaboration can be one-to-one or many-to-many.

Collaboration and teamwork are more important today than ever for a variety of reasons

1. Changing nature of work.
2. Growth of professional work.
3. Changing organization of the firm
4. Changing scope of the firm
5. Emphasis on innovation.
6. Changing culture of work and business

WHAT IS SOCIAL BUSINESS?

Many firms today enhance collaboration by embracing social business—the use of social networking platforms, including Facebook, Twitter, and internal corporate social tools—to engage their employees, customers, and suppliers. These tools enable workers to set up profiles, form groups, and “follow” each other’s status updates.

TABLE 2.2 APPLICATIONS OF SOCIAL BUSINESS

SOCIAL BUSINESS APPLICATION	DESCRIPTION
Social networks	Connect through personal and business profiles
Crowdsourcing	Harness collective knowledge to generate new ideas and solutions
Shared workspaces	Coordinate projects and tasks; co-create content
Blogs and wikis	Publish and rapidly access knowledge; discuss opinions and experiences
Social commerce	Share opinions about purchasing or purchase on social platforms
File sharing	Upload, share, and comment on photos, videos, audio, text documents
Social marketing	Use social media to interact with customers; derive customer insights
Communities	Discuss topics in open forums; share expertise

TABLE 2.3 BUSINESS BENEFITS OF COLLABORATION AND SOCIAL BUSINESS

BENEFIT	RATIONALE
Productivity	People interacting and working together can capture expert knowledge and solve problems more rapidly than the same number of people working in isolation from one another. There will be fewer errors.
Quality	People working collaboratively can communicate errors, and corrective actions faster than if they work in isolation. Collaborative and take social technologies help reduce time delays in design and production.
Innovation	People working collaboratively can come up with more innovative ideas for products, services, and administration than the same number working in isolation from one another. Advantages to diversity and the "wisdom of crowds."
Customer service	People working together using collaboration and social tools can solve customer complaints and issues faster and more effectively than if they were working in isolation from one another.
Financial performance (profitability, sales, and sales growth)	As a result of all of the above, collaborative firms have superior sales, sales growth, and financial performance.

BUILDING A COLLABORATIVE CULTURE AND BUSINESS PROCESSES

Collaboration won't take place spontaneously in a business firm, especially if there is no supportive culture or business processes. Business firms, especially large firms, had a reputation in the past for being "command and control" organizations where the top leaders thought up all the really important matters, and then ordered lower-level employees to execute senior management plans.

TOOLS AND TECHNOLOGIES FOR COLLABORATION AND SOCIAL BUSINESS

A collaborative, team-oriented culture won't produce benefits without information systems in place to enable collaboration and social business. Hundreds of tools are designed to deal with the fact that, in order to succeed in our jobs, we must depend on one another—our fellow employees, customers, suppliers, and managers.

E-mail and Instant Messaging (IM)

- WeChat
- DingTalk
- Facebook
- Viber
- LinkedIN
- Microsoft

Microsoft SharePoint

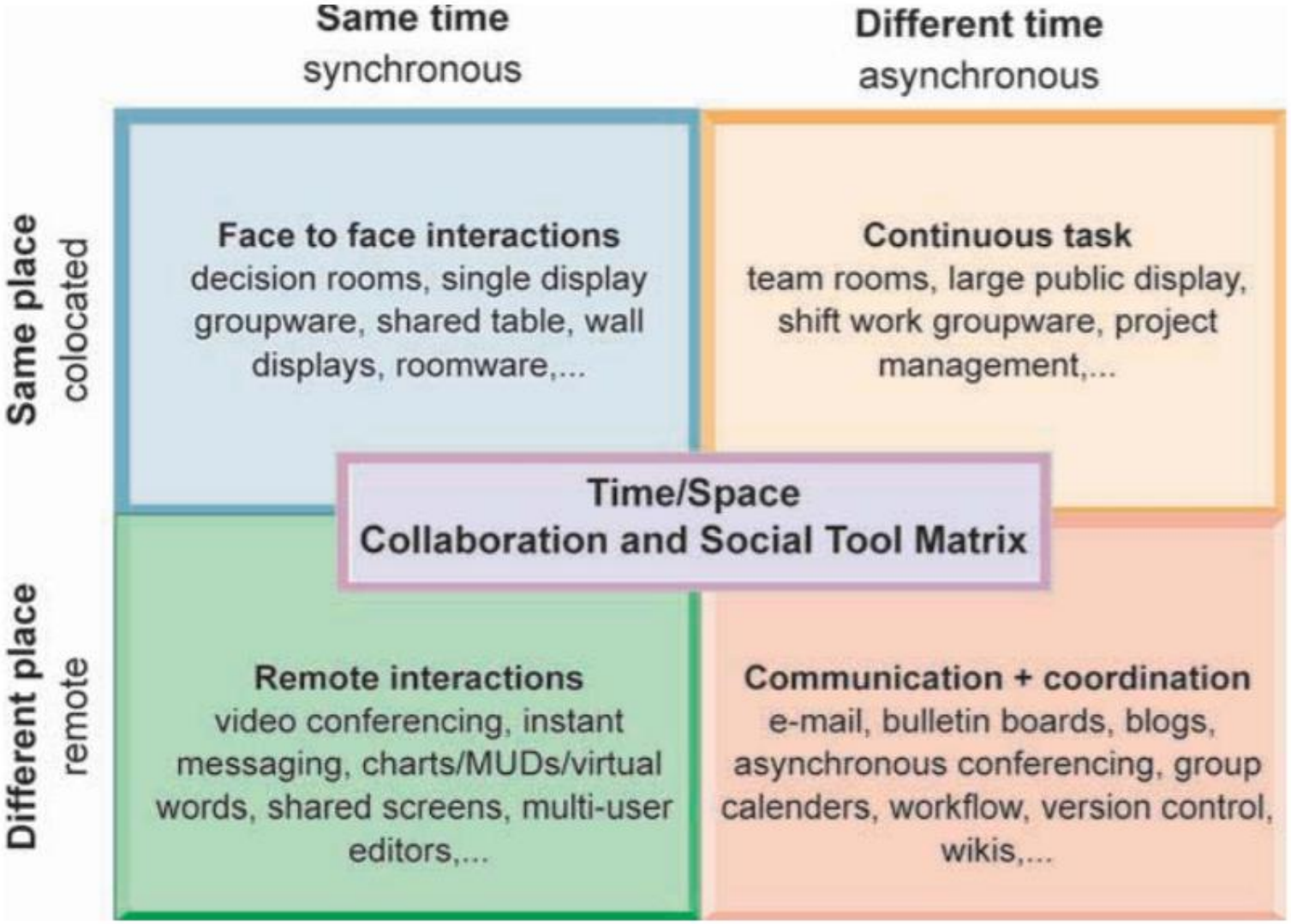
Microsoft SharePoint is a browser-based collaboration and document management platform, combined with a powerful search engine that is installed on corporate servers. SharePoint has a Web-based interface and close integration with everyday tools such as Microsoft Office desktop software products.

LaTex is text editor for academic papers supporting teamwork.

TABLE 2.5 ENTERPRISE SOCIAL NETWORKING SOFTWARE CAPABILITIES

SOCIAL SOFTWARE CAPABILITY	DESCRIPTION
Profiles	Ability to set up member profiles describing who individuals are, educational background, interests. Includes work-related associations and expertise (skills, projects, teams).
Content sharing	Share, store, and manage content including documents, presentations, images, and videos.
Feeds and notifications	Real-time information streams, status updates, and announcements from designated individuals and groups.
Groups and team workspaces	Establish groups to share information, collaborate on documents, and work on projects, with the ability to set up private and public groups and to archive conversations to preserve team knowledge.
Tagging and social bookmarking	Indicate preferences for specific pieces of content, similar to the Facebook Like button. Tagging lets people add keywords to identify content they like.
Permissions and privacy	Ability to make sure private information stays within the right circles, as determined by the nature of relationships. In enterprise social networks,there is a need to establish who in the company has permission to see what information.

FIGURE 2.8 THE TIME/SPACE COLLABORATION AND SOCIAL TOOL MATRIX



Collaboration and social technologies can be classified in terms of whether they support interactions at the same or different time or place, and whether these interactions are remote or colocated.

2.4 THE INFORMATION SYSTEMS FUNCTION IN BUSINESS

We've seen that businesses need information systems to operate today and that they use many different kinds of systems. But who is responsible for running these systems? Who is responsible for making sure the hardware, software, and other technologies used by these systems are running properly and are up to date?

The information systems department
IT department

In all but the smallest of firms, the information systems department is the formal organizational unit responsible for information technology services. The information systems department is responsible for maintaining the hardware, software.

THE INFORMATION SYSTEMS DEPARTMENT

- The information systems department consists of specialists, such as **programmers**, systems analysts, project leaders, and information systems managers. Programmers are highly trained technical specialists who write the software instructions for computers.
- **Systems analysts** constitute the principal liaisons between the information systems groups and the rest of the organization. It is the systems analyst's job to translate business problems and requirements into information requirements and systems.

Chief information officer (CIO)

In many companies, the information systems department is headed by a chief information officer (CIO). The CIO is a senior manager who oversees the use of information technology in the firm. Today's CIOs are expected to have a strong business background as well as information systems expertise and to play a leadership role in integrating technology into the firm's business strategy.

CSO, CKO,CPO

The chief security officer (CSO)

- The chief security officer (CSO) is in charge of information systems security for the firm and is responsible for enforcing the firm's information security policy.
- (Sometimes this position is called the chief information security officer [CISO] where information systems security is separated from physical security.)

Chief privacy officer (CPO).

Information systems security and the need to safeguard personal data have become so important that corporations collecting vast quantities of personal data have established positions for a chief privacy officer (CPO). The CPO is responsible for ensuring that the company complies with existing data privacy laws.

The chief knowledge officer (CKO)

The chief knowledge officer (CKO) is responsible for the firm's knowledge management program. The CKO helps design programs and systems to find new sources of knowledge or to make better use of existing knowledge in organizational and management processes.

ORGANIZING THE INFORMATION SYSTEMS FUNCTION

There are many types of business firms, and there are many ways in which the IT function is organized within the firm. A very small company will not have a formal information systems group. It might have one employee who is responsible for keeping its networks and applications running, or it might use consultants for these services.

ORGANIZING THE INFORMATION SYSTEMS FUNCTION, part 02

The question of how the information systems department should be organized is part of the larger issue of IT governance. IT governance includes the strategy and policies for using information technology within an organization. It specifies the decision rights and framework for accountability to ensure that the use of information technology supports the organization’s strategies and objectives.

Review Summary

- What are business processes? How are they related to information systems?
- How do systems serve the different management groups in a business?
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1. What are business processes? How are they related to information systems?

A business process is a logically related set of activities that defines how specific business tasks are performed, and it represents a unique way in which an organization coordinates work, information, and knowledge. Managers need to pay attention to business processes because they determine how well the organization can execute its business, and they may be a source of strategic advantage.

2. How do systems serve the different management groups in a business?

Systems serving operational management are transaction processing systems (TPS), such as payroll or order processing, that track the flow of the daily routine transactions necessary to conduct business. Management information systems (MIS) produce reports serving middle management by condensing information from TPS, and these are not highly analytical. Decision-support systems (DSS) support management decisions that are unique and rapidly changing using advanced analytical models.

3. How do systems that link the enterprise improve organizational performance?

Enterprise applications are designed to coordinate multiple functions and business processes. Enterprise systems integrate the key internal business processes of a firm into a single software system to improve coordination and decision making. Supply chain management systems help the firm manage its relationship with suppliers to optimize the planning, sourcing, manufacturing, and delivery of products and services.

4. Why are systems for collaboration and social business so important and what technologies do they use?

Collaboration is working with others to achieve shared and explicit goals. Social business is the use of internal and external social networking platforms to engage employees, customers, and suppliers, and it can enhance collaborative work. Collaboration and social business have become increasingly important in business because of globalization, the decentralization of decision making, and growth in jobs where interaction is the primary value-adding activity. Collaboration and social business enhance innovation, productivity, quality, and customer service.

5. What is the role of the information systems function in a business?

The information systems department is the formal organizational unit responsible for information technology services. It is responsible for maintaining the hardware, software, data storage, and networks that comprise the firm’s IT infrastructure.

Review Questions and tasks

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Inside the FedEx Express World Hub

It’s called the Super hub for a reason. The technology is mind blowing. It’s the size of a small city. Between the hours of 10 pm till about 4 am it’s the busiest airport in the world. Take an inside look at the FedEx Express World Hub in Memphis, Tennessee.

Inside the FedEx Express World Hub

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How Walmart uses blockchain technology. An interview at Fox News channel.

Mavatar CEO Susan Akbarpour discusses how blockchain technology is helping Walmart track inventory.

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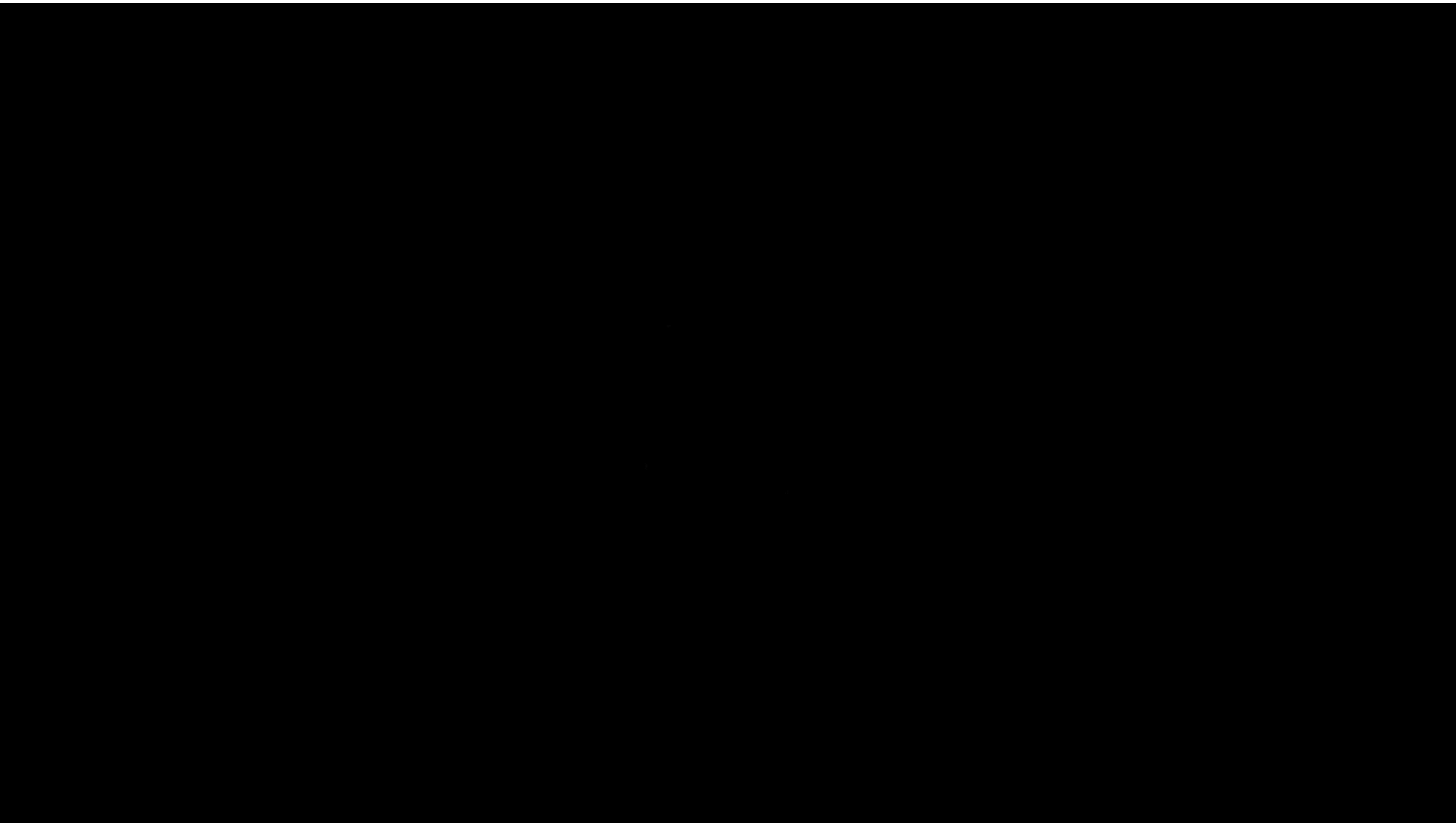
Walmart's food safety solution using IBM Food Trust built on the IBM Blockchain Platform




Thank you